

ABSTRACT OF THE DISCLOSURE

METHOD AND SYSTEM FOR RESPONDING TO FILE SYSTEM REQUESTS

A system for responding to file system requests having file IDs comprising V, a volume identifier specifying the file system being accessed, and R, an integer, specifying the file within the file system being accessed. The system includes D disk elements in which files are stored, where D is greater than or equal to 1 and is an integer. The system includes a switching fabric connected to the D disk elements to route requests to a corresponding disk element. The system includes N network elements connected to the switching fabric. Each network element has a mapping function that for every value of V, specifies one or more elements from the set D that store the data specified by volume V, where N is greater than or equal to 1 and is an integer and $N + D$ is greater than or equal to 3, which receives the requests and causes the switching fabric to route the requests by their file ID according to the mapping function. A method for responding to file system requests. The method includes the steps of receiving file system requests having file IDs comprising V, a volume identifier specifying the file system being accessed, and R, an integer, specifying the file within the file system being accessed at network elements. Each network element has a mapping function that for every value of V, specifies one or more elements from the set D that store the data specified by volume V. Then there is the step of routing the requests to a switching fabric connected to the network elements based on the file system request's ID according to the mapping function to disk elements connected to the switching fabric.